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1. (Amended) A sensor with a movable microstructure, comprising a sensitive element formed in a first chip of semiconductor material for producing an electrical signal dependent on a movement of at least one movable microstructure relative to a surface of the first chip, the sensitive element being enclosed in a hollow hermetic structure, and a processing circuit for processing said electrical signal formed in a second chip of semiconductor material and in electrical connection with the electrical signal produced by the sensitive element formed in the first chip, the hollow hermetic structure including a metal wall disposed on a surface of the first chip around the sensitive element, the second chip being fixed to said wall.

2. (Amended) The [A] sensor according to claim 1 wherein the metal wall is comprised substantially of nickel.

3. (Amended) The [A] sensor according to claim 1, further comprising at least one first conductive pad formed on the surface of the first chip within the hollow hermetic structure and connected electrically to the sensitive element, each at least one first conductive pad being connected to a second, facing conductive pad formed on a surface of the second chip for transmitting the electrical signal to the processing circuit.

4. (Amended) The [A] sensor according to claim 3, further comprising at least one third conductive pad formed on the surface of the first chip within the hollow hermetic structure, each at least one third pad being connected to a fourth, facing conductive pad formed on the surface of the second chip for receiving an electrical signal processed by the processing circuitry.

5. (Amended) The [A] sensor according to claim 4, further comprising at least one fifth conductive pad formed on the surface of the first chip outside the hollow hermetic structure, each at least one fifth pad being connected electrically to a corresponding sixth [third] pad for transmitting the processed electrical signal outside of the sensor.

6. (Amended) The [A] sensor according to claim 1 wherein the sensor comprises an inertial sensor.

12. (Amended) A sensor comprising:
a first chip of semiconductor material;
a sensor element having a movable microstructure, the sensor element being supported by the first chip and being structured to generate a first signal in response to a movement of the microstructure relative to the first chip;
a second chip of semiconductor material configured to receive the first signal; and
a wall formed on the first chip and surrounding the sensor element and connecting the first chip to the second chip, the wall defining a hermetically sealed chamber between the first chip and the second chip and enclosing the sensor element.

13. (Amended) The [A] sensor according to claim ⁸12 wherein the wall is comprised of a metal.

14. (Amended) The [A] sensor according to claim 12 wherein the second chip of semiconductor material comprises [, further comprising] a processing circuit electrically coupled to the sensor element to receive the first signal, the processing circuit being structured to process the first signal and generate a second signal based on the first signal.

15. (Amended) The [A] sensor according to claim 14 wherein the processing circuit is formed in the second chip.

16. (Amended) The [A] sensor according to claim ⁸12, further comprising:
a plurality of conductive pads connected between the first chip and the second chip; and
a low resistance diffusion in the first chip between the sensor element and the pads.

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17. (Amended) The [A] sensor according to claim 14 [12], further comprising at least one output terminal outside the sealed chamber and coupled to the processing circuit to receive the second signal.

13. 18. (Amended) The [A] sensor according to claim 12⁸ wherein the sensor element comprises an inertial sensor.

14. 19. (Amended) The [A] sensor according to claim 12⁸ wherein the sensor element comprises a resonant sensor.

15. 20. (Amended) The [A] sensor according to claim 12⁸ wherein the sealed chamber encloses a gas at a pressure below atmospheric pressure.

REMARKS

Claims 1-7 and 12-20 remain in the application. Claims 1-6 and 12-20 have been amended.

In the first Office Action mailed January 24, 2000, the Examining Attorney rejected claims 3-5 and 17 for minor informalities. These informalities have been corrected as set forth above. Claims 1, 6, 12-15, and 18-19 were rejected under 35 U.S.C. § 102(b) as anticipated by European Patent No. 0773443 ("Flach et al."). Claims 1-7 and 12-20 were rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 5,864,063 ("Otani et al.") in view of U.S. Patent No. 5,650,567 ("Ueda et al.") and U.S. Patent No. 5,719,334 ("Parsons").

Applicants respectfully disagree with the bases for the rejections and requests reconsideration and further examination of the claims.

As described more fully in the specification on file in the above-referenced application, the disclosed embodiments of the present invention are directed to a hermetically-sealed sensor with a movable structure formed in a first chip of semiconductor material. A hollow hermetic structure is formed on the first chip by a circumscribing metal wall disposed on a surface of the first chip that surrounds the sensitive element and a second chip fixed on top of